SPECTRUM®

Bay Networks Centillion 100 Management Module Guide

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Preface

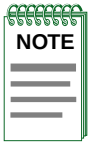
Use this guide as a reference for the Centillion 100 management software. Before using this guide, you should be familiar with SPECTRUM's functions and navigational techniques as described in the Operation and Administration documentation.

For the purposes of this guide, the Centillion 100 is referred to as "device."

What Is in This Guide

The following outlines the organization of the ***Centillion 100 Management Module Guide:***

Chapter	Description
Chapter 1 *Introduction*	Describes the device, the management module software, and model types. This chapter also provides information on accessing device-specific views.
Chapter 2 *Device Views*	Describes the Device views representing the device.
Chapter 3 *Configuration Views*	Describes the Configuration views for the device and the network management information provided by the views.
Chapter 4 *Application Views*	Describes the Application views for the device and application-specific information for this device.



This device does not contain an Events and Alarms chapter.

Conventions

This guide uses the following conventions:

- Menu selections and buttons referenced in text appear in **bold**; for example, **Configuration** or **Detail**.
- Button names appear in shadowed boxes when introducing paragraphs describing their use; for example:

Help

- Menu navigation appears in order of selection; for example, **Icon Subviews -> Utilities -> Application**.
- Referenced chapter titles and section headings appear in *italics*.
- Referenced documents appear in ***bold italics***.
- References in blue are hypertext links for online documents.

Related SPECTRUM Documentation

When using this guide, you should have a clear understanding of SPECTRUM functionality and navigation techniques as described in the Administration, Operation, and following documentation:

Report Generator User's Guide

Getting Started with SPECTRUM for Operators

Getting Started with SPECTRUM for Administrators

How to Manage Your Network with SPECTRUM

Other Related Documentation

Refer to the following documentation for more information on managing TCP/IP-based networks:

Martin, James, Kathleen Kavanagh Chapman, Joe Leben. ***Local Area Networks: Architectures and Implementations***, 2d ed. Englewood Cliffs, NJ: Prentice Hall, 1994.

Rose, Marshall T. ***The Simple Book: An Introduction to Management of TCP/IP-based Internets***. Englewood Cliffs, NJ: Prentice Hall, 1991.

Stallings, William. ***Data and Computer Communications***, 4th ed. New York: Macmillan Publishing Company, 1994.

Tanenbaum, Andrew S. ***Computer Networks***, 3d ed. Englewood Cliffs, NJ: Prentice Hall, 1996.

Chapter 1

Introduction

What Is in This Chapter

This chapter introduces the SPECTRUM management module for the Bay Networks Centillion 100 Chassis. It describes the following:

- Bay Networks Centillion 100 Chassis
- SPECTRUM Support
  - Accessing SPECTRUM Views
  - Centillion 100 Roadmap

Bay Networks Centillion 100 Chassis

The Centillion 100 chassis is a switch that offers LAN-to-LAN, LAN-to-ATM, and ATM-to-ATM switching within a medium to large enterprise network. The Centillion chassis supports up to six switch modules; any combination of TokenSpeed, ATMSpeed/155, and EtherSpeed modules. One module must contain an integrated mcp (master control processor), which provides network management functions. The Centillion 100 switch supports the interconnection of up to 88 local LANs per switch (using five EtherSpeed modules and one EtherSpeed/MCP module). Switch to switch communication is provided with token ring, Ethernet, or ATM connectivity between Centillion 100 switches. In addition the Centillion 100 features:

- 3.2 GBs ATM backplane and 400 Mbs control bus
- Optional load sharing, redundant power supplies
- Hot swapable modules
- SNMP, BootP, and TFTP support

SPECTRUM Device Management

SPECTRUM management modules are software packages that provide templates for creating models of devices. These templates, called model types, specify attributes that correspond to objects defined in the Management Information Bases (MIBs) which govern the operation of the device or application to be modeled.

SpectroGRAPH displays models as icons. These icons provide color-coded status information and double-click access to other views that contain detailed configuration and performance information. The models that are represented by these icons reside in the SpectroSERVER database, where they are continuously updated with new information retrieved during the polling cycle. The model type name of the device for this management module is HubBayCent100.

Accessing SPECTRUM Views

Icons and labels that display information within an icon provide access to SPECTRUM views. This is done thorugh double-click zones (Figure 1-1) and Icon Subviews menus (Figure 1-2).

To access the Icon Subviews menu as shown in Figure 1-2 and Figure 1-3:

1. Highlight the icon or label.
2. From the View menu, select **Icon Subviews** or click the applicable mouse button (middle or right). Refer to ***Getting Started with SPECTRUM for Operators*** for information on configuring your mouse.

Figure 1-1. Using Double-Click Zons to Access SPECTRUM Views

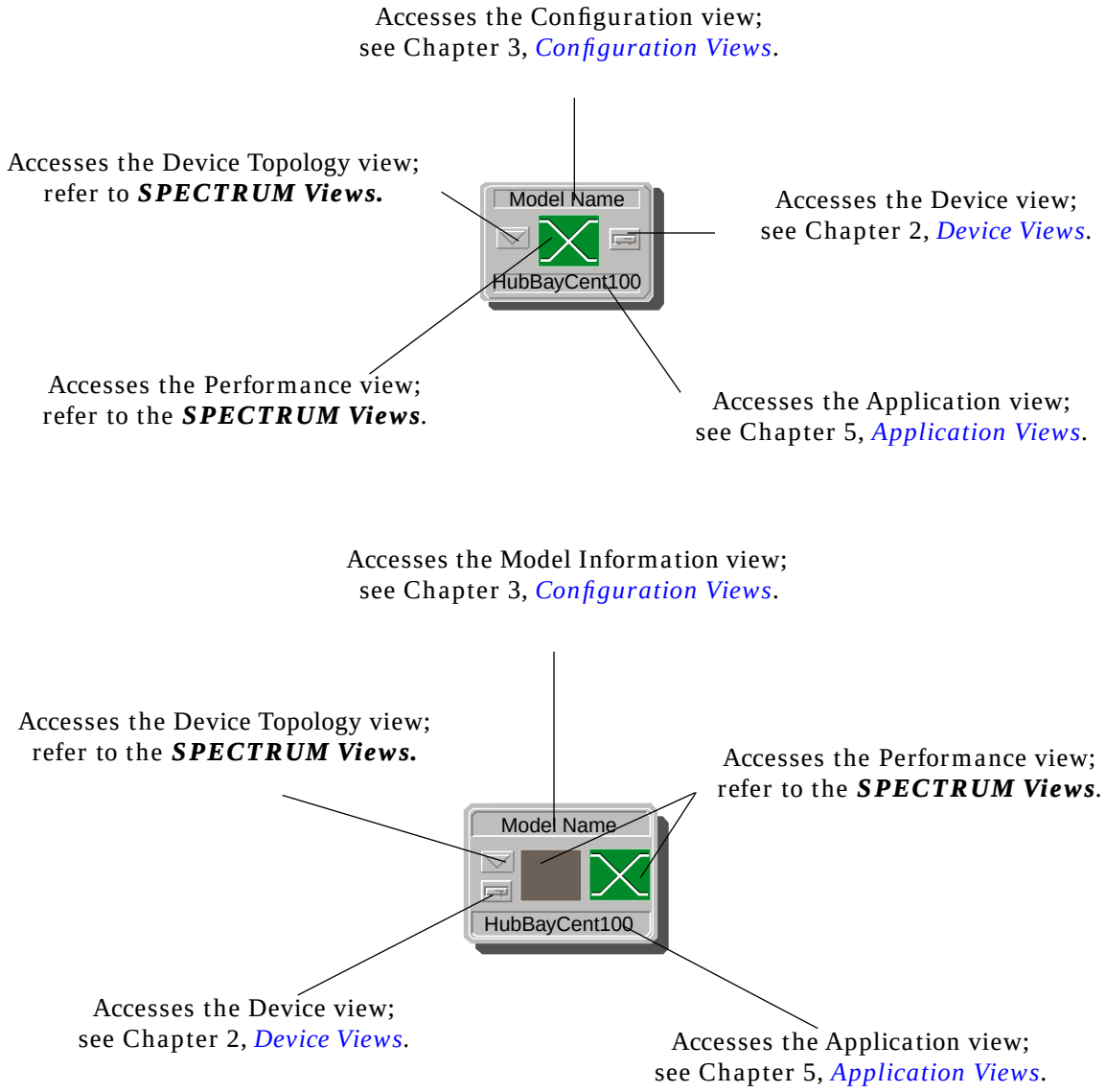

Accesses the Configuration view;
see Chapter 3, Configuration Views.
Accesses the Device Topology view;
refer to SPECTRUM Views.
Model Name
HubBayCent100
Accesses the Device view;
see Chapter 2, Device Views.
Accesses the Performance view;
refer to the SPECTRUM Views.
Accesses the Application view;
see Chapter 5, Application Views.
Accesses the Model Information view;
see Chapter 3, Configuration Views.
Accesses the Device Topology view;
refer to the SPECTRUM Views.
Accesses the Performance view;
refer to the SPECTRUM Views.
Model Name
HubBayCent100
Accesses the Device view;
see Chapter 2, Device Views.
Accesses the Application view;
see Chapter 5, Application Views.

Figure 1-2. Using the Icon Subviews Menu to Access SPECTRUM Views

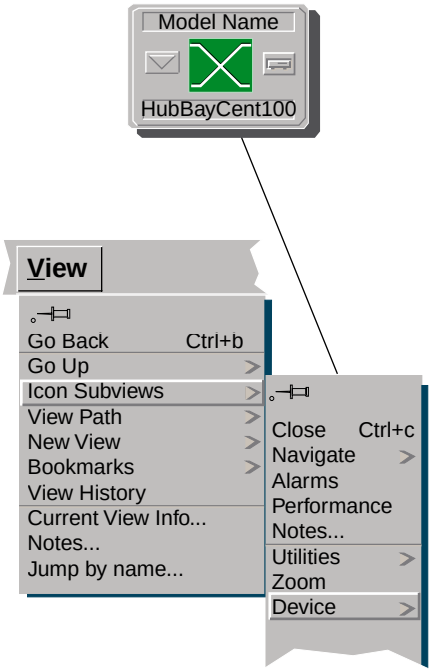
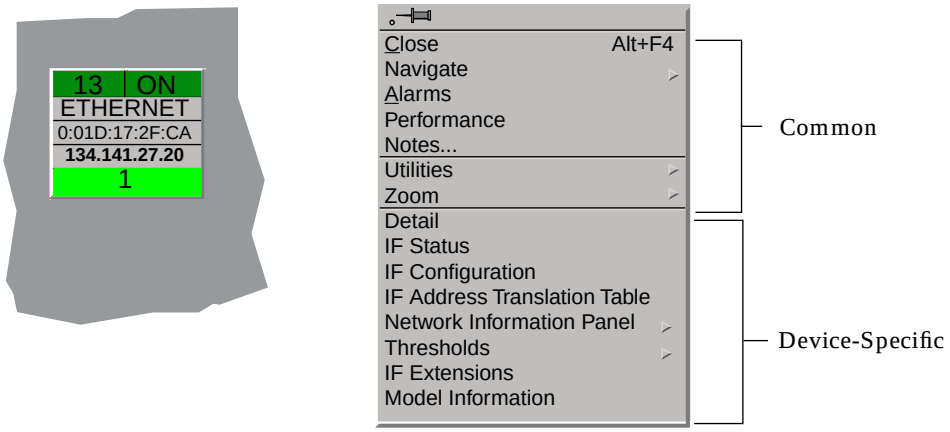


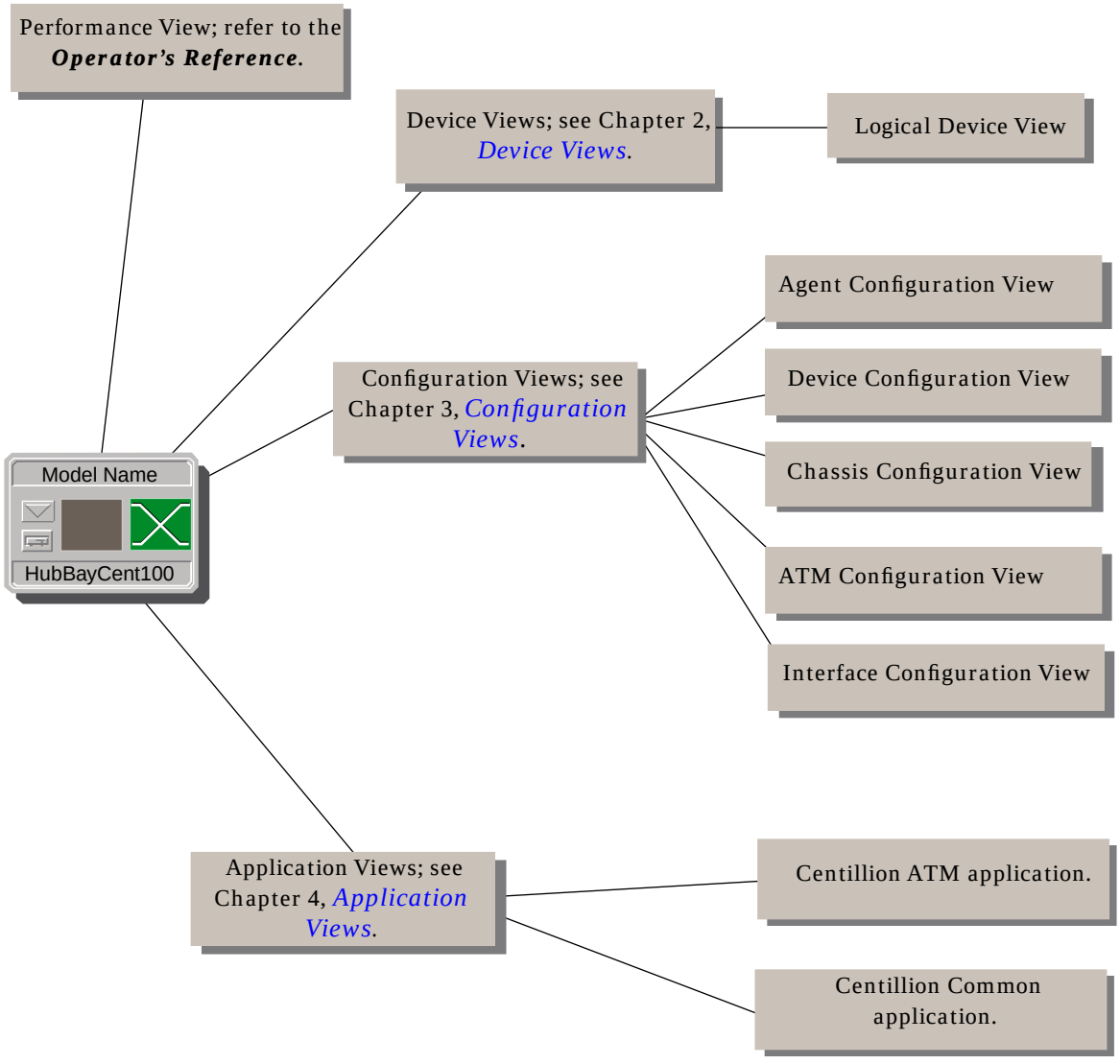
Figure 1-3. Accessing Device-Specific Subviews



Spectrum Views Roadmap

Figure 1-4 shows a "roadmap" of the SPECTRUM views for this device. These views are accessible from double-click zones (Figure 1-1) and Icon Subviews menus (Figure 1-2 and Figure 1-3).

Figure 1-4. Spectrum Views Roadmap



Chapter 2

Device Views

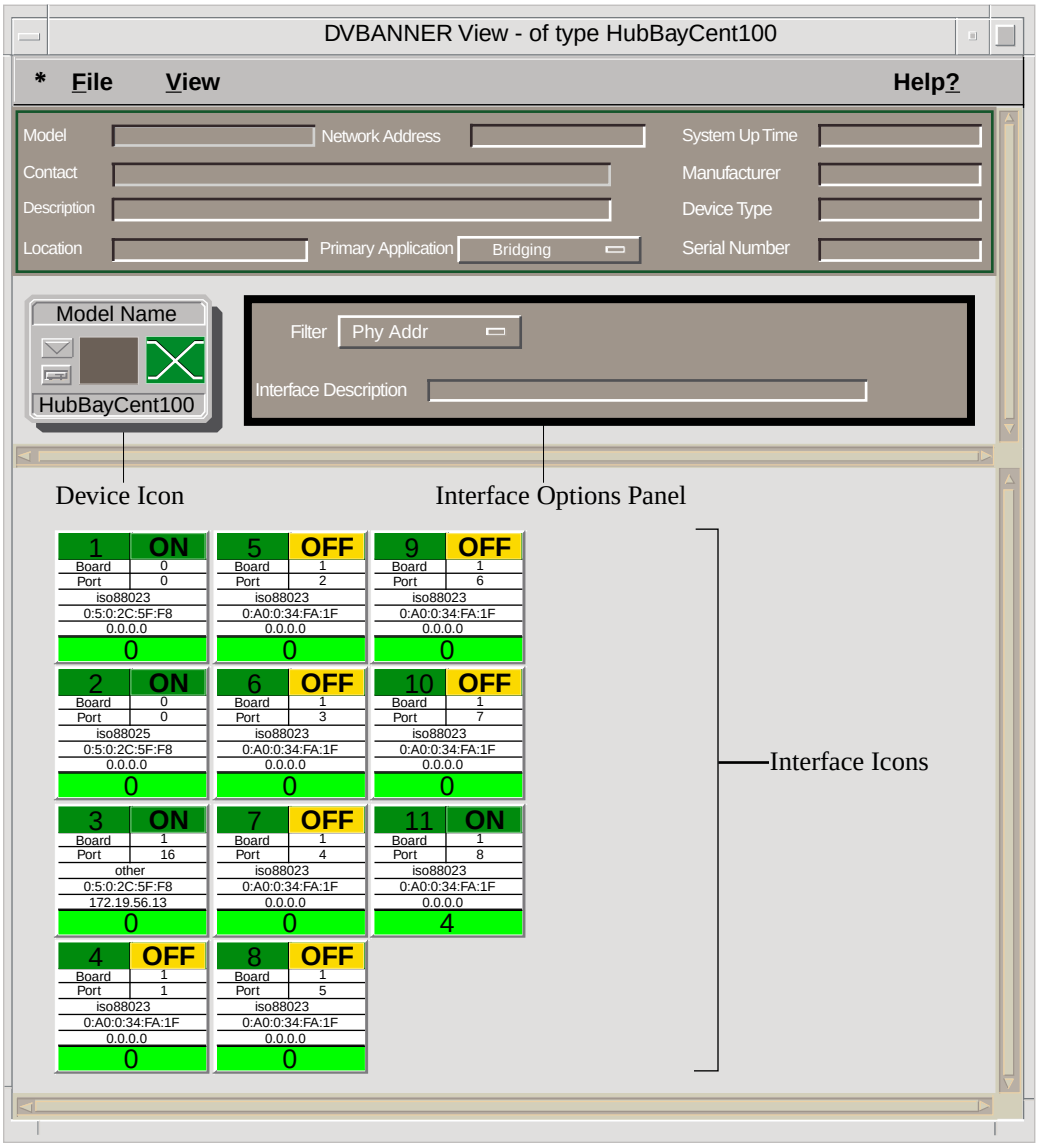
What Is in This Chapter

This chapter provides a description of the Device views for the Bay Networks Centillion 100 Chassis Management Module. The Device view allows you to display a logical representation of the switch.

Logical Device View

The Logical Device view is a representation of the device configuration. If the configuration of the device changes during the polling cycle, SPECTRUM automatically updates the view. Figure 2-1 shows the Logical Device view.

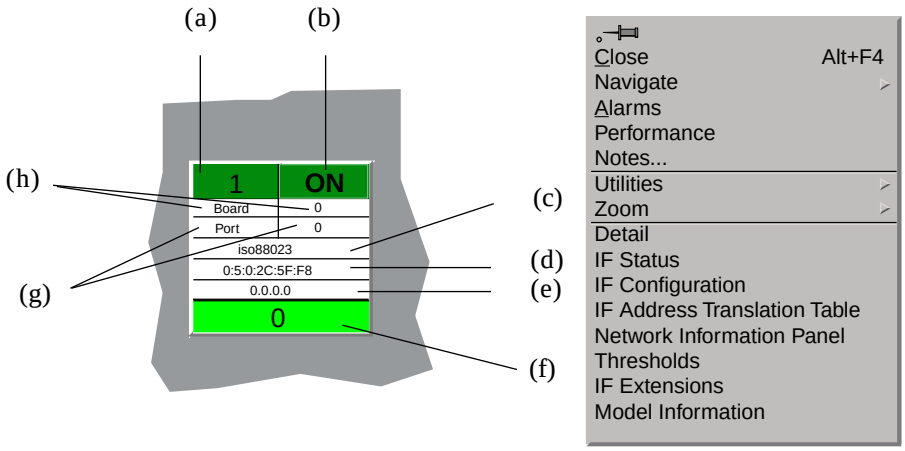
Figure 2-1. Logical Device View


DVBANNER View - of type HubBayCent100
* File View Help?
Model
Network Address
System Up Time
Contact
Manufacturer
Description
Device Type
Location
Primary Application
Bridging
Serial Number
Model Name
HubBayCent100
Filter
Phy Addr
Interface Description
Device Icon
Interface Options Panel
Interface Icons
1 ON Board 0 Port 0 iso88023 0:5:0:2C:5F:F8 0.0.0.0 0
5 OFF Board 1 Port 2 iso88023 0:A0:0:34:FA:1F 0.0.0.0 0
9 OFF Board 1 Port 6 iso88023 0:A0:0:34:FA:1F 0.0.0.0 0
2 ON Board 0 Port 0 iso88025 0:5:0:2C:5F:F8 0.0.0.0 0
6 OFF Board 1 Port 3 iso88023 0:A0:0:34:FA:1F 0.0.0.0 0
10 OFF Board 1 Port 7 iso88023 0:A0:0:34:FA:1F 0.0.0.0 0
3 ON Board 1 Port 16 other 0:5:0:2C:5F:F8 172.19.56.13 0
7 OFF Board 1 Port 4 iso88023 0:A0:0:34:FA:1F 0.0.0.0 0
11 ON Board 1 Port 8 iso88023 0:A0:0:34:FA:1F 0.0.0.0 4
4 OFF Board 1 Port 1 iso88023 0:A0:0:34:FA:1F 0.0.0.0 0
8 OFF Board 1 Port 5 iso88023 0:A0:0:34:FA:1F 0.0.0.0 0

Logical Device Detail

Figure 2-2 shows a detailed illustration of the Interface icon, its double-click zones, and Subviews menu. For more information on accessing SPECTRUM views, refer to ***SPECTRUM Views***.

Figure 2-2. Logical Device Detail View



The following defines the interface icon labels a-f, shown in Figure 2-2, and any double-click zones that can be accessed from this icon.

a. Interface Label

b. Administrative Status Label/Interface Status View

c. Interface Type Label/Interface Configuration View

d. Mac Address Label/Interface Address Translation Table View

e. Network Address Label

f. Gauge Label/Performance View

g. Port # Label

h. Board # Label

Interface Label

This label displays the interface number.

Administrative Status Label

This label displays the status of this interface. Double-click this label to open the Interface Status View described on page 2-4. Table 2-1 lists the possible status values.

Table 2-1. Administrative Status Values

Color	Status	Description
Green	ON	Port is operational.
Blue	OFF	Port is off.
Red	TST	Port is in the test mode.

Interface Status View

The Interface Status View provides the following information for the selected interface:

Operational Status
A read-only indicator displaying the current operational state of the interface. The possible states are ON, OFF, Testing, and Default.

Administrative Status
A drop-down menu button that allows you to select the operational state of the interface. The possible states are ON, OFF, Testing, and Default.

InterfaceType Label

This label displays the interface type. For a listing of all interface types refer to ***SPECTRUM Views***. Double-click this label to open the Interface Configuration View, described in Chapter 3, *Configuration Views*.

MAC Address Label

This label displays the MAC address of the device interface. Double-click this label to open the Interface Address Translation Table View, described on page 2-5.

Interface Address Translation Table View

In addition to the following information, you can double-click any entry in the table to access to the Interface Address Translation Information View, which contains the same infomation as the table view with the exception that it pertains only to the selected entry. For more information on table views, refer to ***SPECTRUM Views***.

Interface Index
The value identifying the port.

Physical Address
The physical (MAC) address of the port.

Network Address
The network (IP) address of the port.

Network Address Label

This label displays the current IP address of the interface.

Gauge Label

This label displays the performance statistic determined by the Gauge Control Panel for this interface (refer to ***SPECTRUM Views*** for more information on the Gauge Control Panel.) Double-click this label to open the Performance view, described in ***SPECTRUM Views***.

Port # Label

The port number to which this device is attached.

Board # Label

The board number which contains the port.

Interface Icon Subviews Menu

Table 2-2 describes the Interface icon device-specific Subviews menu selections. For information on accessing device-specific Subviews menus, refer to ***SPECTRUM Views***.

Table 2-2. Interface Icon Subviews Menu

Menu Selection	Description
Detail	Opens the Interface Detail view, described in ***SPECTRUM Views.***
IF Status	Opens the Interface Status View, described on page 2-4.
IF Configuration	Opens the Interface Configuration View, described in Chapter 3, *Configuration Views*.
IF Address Translation Table	Opens the Interface Address Translation Table View, described on page 2-5.
Network Information Panel	Opens the Network Information Panel View, described on page 2-6.
Thresholds	Opens the Interface Thresholds View, described on page 2-7.
IF Extensions	Opens the Interface Extensions Configuration view, described in Chapter 3.
Model Information	Opens the Model Information View, described in ***SPECTRUM Views***.

Interface Icon Subviews Menu Selections

Network Information Panel View

The Network Information Panel View provides the fololwing information:

Name
The unique name assigned to the device.

Address
The IP address of the interface.

Mask
The mask address of the interface.

Interface Threshold View

The Interface Threshold View provides the following information:

Load Threshold
The ON and OFF values are set to determine the point at which a load alarm will be turned on or off.

Packet Rate Threshold
The ON and OFF values are set to determine the point at which a packet transmission alarm will be turned on or off.

Error Rate Threshold
The ON and OFF values are set to determine the point at which an error alarm will be turned on or off.

% Discarded Threshold
The ON and OFF values are set to determine the point at which a discarded threshold alarm will be turned on or off.

Next Boot Net Mask
Displays the subnet mask for the interface that will be used for the next boot. If no subnet mask is used, then the value is 0.0.0.0. The current subnet mask for the interface is found in the IP Address Table.

Load Server Addr
Displays the IP address of the load server for the configuration file and/or the image file. If the IP address is not used, then the value is 0.0.0.0.

Valid Flag
Indicates whether the configuration and image file(s) or either were downloaded from this interface and whether the file names are unchanged. Table 2-3 lists these values and their descriptions.

Table 2-3. Valid Flag Status Values

Value	Description
valid	Configuration and/or image file(s) downloaded from this interface are currently in use.
invalid	Configuration and/or image files downloaded from this interface are not in use (this may also mean that there are no files downloaded from this interface).

Config File Name
Displays the name of the configuration file currently associated with the interface. When not used, the value is a zero length string.

Image File Name
Displays the name of the image file(s) currently associated with the interface. Some agents in special situations may support a value which contains multiple file names instead of a single file name. Multiple names are specified

as a list of file names separated by semicolons (;). When this object is not used, the value is a zero length string.

Write Configuration Settings to NVRAM
Provides a button that allows you to write the configuration settings to non-volatile random access memory (NVRAM). This causes the current configuration settings to be written to local non-volatile storage. These settings are described in Table 2-4.

Table 2-4. Write Configuration Settings to NVRAM Status Values

Value	Description
valid	contents valid
write	write configuration settings to local storage (such as NVRAM)
other	some unknown or other state

Chapter 3

Configuration Views

What Is in This Chapter

This chapter describes the Configuration views available for the Bay Networks Centillion 100 Chassis. These views display network configuration and operating information for the device and its interfaces.

The following Configuration views are available for this device:

- Interface Configuration
- Chassis Configuration
- Agent Configuration
- ATM Configuration
  - ATM ELAN
  - ATM Packet Circuit
  - ATM Cell Circuit
  - ATM Port
- Interface Extensions Configuration
- Device Configuration

Interface Configuration View

This view contains more detailed network configuration information for the device interface. To access this view:

1. Highlight the Device Icon within the Logical Device view.
2. Select **IF Configuration** from the Icon Subviews menu.

This view provides the following information:

Operation Status
The operational state of the interface, values are on or off

Admin Status
The administrative status of the interface, possible values are on, off, and testing

Last Change
The last time, **System Up Time,** that a change was made to this interface configuration.

IP Address/Network Mask
The IP Address and Network mask of the interface.

Physical Address
The physical (MAC) address of the interface.

Bandwidth
Displays the estimated bandwidth of the interface, measure in bits per second. For interfaces that do not vary in bandwidth or for which no accurate estimate can be made, a nominal bandwidth is displayed.

Packet Size
Displays the size of the packet on the interface.

Queue Length
Displays the number of packets in the queue.

Chassis Configuration View

This view contains more detailed network configuration information about the device chassis. To access this view:

1. Highlight the Device Icon.
2. Select **Chassis Configuration** from the Icon Subviews menu.

This view provides the following information:

Chassis Type
The type of chassis.

Backplane Type
The type of chassis backplane.

Ps1 Fail Status
Power supply 1 failure indicator. A value of 0 indicates failure.

Ps2 Fail Status
Power supply 2 failure indicator. A value of 0 indicates failure.

Fan Fail Status
System chassis fan failure status. A value of 0 indicates failure on one or both of the system fans.

Serial Number
The chassis serial number.

Part Number
The chassis part number.

Also, this view contains a slot configuration table which enables the user to view infomation pertaining to all slots on the device. The table contains the following information:

Board
The chassis slot number. Valid entries are system dependent, based on the chassis type.

Module Type
The module type.

Hardware Version
The hardware version of the module.

Serial Number
The module serial number. The format is 3 BCD digits.

Software Version
The software version of the module.

Status
This indicates the operational status of the module. Possible values are ok and fail.

Reset
This indicates the reset state of the module. Writing with the value `reset` (2) will reset the module.

Config Delete
Setting this object causes the configuration of the module to be deleted. When read this object has a value of `false` (2).

Config Media Type
The configured card media type. In the case of a card mismatch, the configured media type and the card type will not match

Agent Configuration View

This view contains more detailed network configuration information about the device agent. To access this view:

1. Highlight the Device Icon.
2. Select **Agent Configuration** from the Icon Subviews menu.

This view provides the following information:

Max Packet Info Size
The system maximum packet information field size. Changing the maximum information size does not take effect until the next system reset.

Configuration Mode
This variable describes the current mode of bridging configuration in the switch. The bridging mode applies to all ports. The value `other`(1) is a read-only indication that the system is in a user customized the system configuration. Setting this object will save the configuration into flash and issue a system reset command.

Max Performance Mode
The current value of the system maximum performance mode. Setting this value to `enabled` causes the system to perform in maximum performance mode. Default is `disabled`. This variable does not take effect until the next system reset.

Save Config to Memory
Save the current configuration into flash memory. When read, this value is always `clear` (1). The value may only be set to the `set` (2) state.

Admin Mac Address
The system's locally administered MAC address. The current operation MAC address may be obtained by the **`ifPhysAddress`** entry in the **`ifTable`**. This parameter will take effect only after a reset is issued.

Login
The system login object. This object is used to login a network management station to the system for configuration. The format of the login request follows: login indicator.login password, where the login indicator is a single byte of the value 1 = logoff, 2 = login, or 3 = set password and the password is the system password. The password must be supplied for login or for altering the password. A manager must first login to the system before altering the password. When read, the first octet is returned, indicating whether a managment station is currently logged in to the system.

Management TRing Number
A unique ring number assigned to the system's managment entity. This ring will not appear as a source-route hop as it is seen only in frames destined to or sourced from the system management entity.

Configuration Protocol
The protocol used to retrieve system configuration. `Flash` indicates that the configuration is read from the flash. `tftpNoSave` indicates that the TFTP protocol should be used to retrieve the current configuration. The new configuration is not saved into flash, it is up to the user to save the configuration if desired. The new configuration will not take effect until the next system reset. `tftpSave` indicates that the newly uploaded configuration will be saved into flash, thus it may be use to permanently update a configuration. The system is automatically reset.

Configuration Filename
The name of the configuration file that is sent to the server. The actual boot protocol used to retrieve the file is determined by **`Configuration Protocol.`** This parameter may be configured via the network boot protocol.

Configuration Source
An indication of how the system was actually configured. `flashConfig` indicates that the current configuration was obtained via flash. `remoteConfig` indicates that the configuration was obtained via the protocol determined by **configProtocol**.

IP Address
The system's IP address. The current operational IP address may be obtained by the **`ipAdEntAddr`** entry in the **`ipAddrTable`**. This parameter will take effect only after a reset is issued.

Subnet Mask
The system's IP subnet mask. The current operational IP subnet mask may be obtained by the **`ipAdEntNetMask`** entry in the **`ipAddrTable`**. This parameter will take effect only after a reset is issued. The parameter is not saved unless written to flash.

Bcast Address
The system's IP broadcast address. The current operational IP broadcast address may be obtained by the **`ipAdEntBcastAddr`** in the **`ipAddrTable`**. This parameter will take effect only after a reset is issued. This parameter is not saved unless written to flash.

Default Gateway
The system's default getway IP address. the current operational default gateway's IP address can be obtained from the **`ipRoutingTable`**. This parameter will take effect only after a reset is issued. This parameter is not saved unless written to flash.

Configuration Server
The IP address to which the requests for configuration files are sent. The protocol used to retrieve the configuration is determined by the **`Configuration Protocol`** object. This parameter may be set dynamically as established by the **`ipConfigProtocol`** object.

IF Configuration Protocol
The protocol used to configure IP addressing information. Possible values are `flash` and `bootp`.

TFTP Start
Setting **sysTFTPStart** to tftpGet initiates a file transfer to the agent (download); tftpPut initiates a file transfer to the server (upload).

TFTP IP Address
The IP Address of the TFTP server.

TFTP File Name
The file name of the file to retrieve (tftpGet), or the name of the file to create (tftpPut).

TFTP File Type
The type of file image to upload/download. The file type indicates to the agent what kind of file it is receiving. configuration indicates an update of the system configuration. imageCode indicates a code upgrade of the operational proms. bootCode indicates a code upgrade of the boot proms.

TFTP Result
The result of the last TFTP operation. Possible results and their descriptions are listed in Table 3-1.

Table 3-1. TFTP Results Table

Result	Description
clear	not initialized
xferInProgress	a transfer is currently in progress
okay	okay
otherTFTPError	other type of TFTP error
fileNotFound	check for valid file name
accessError	access error
diskFull	server disk is full
illegalTFTPOperation	illegal TFTP operation
invalidTFTPTransactionID	invalid TFTP transaction ID
fileExists	file already exists
noSuchUser	invalid user
noResources	no resources to start
noResponse	check for valid server IP
flashError	flash programming error
configMismatch	configuration mismatch
configChecksumError	configuration checksum error

ATM Configuration

This menu selection contains four subviews which provide detailed ATM network configuration information To access these views:

1. Highlight the **CentATMApp** within the Application view.
2. Select **ATM Configuration** from the Icon Subviews menu.
3. Select the subview you wish to view.

This selection provides the following views:

ATM ELAN View

Within this view is the ATM ELAN Table view which provides the following information:

Index
The index to the ATM ELAN Table.

ELAN Type
The ELAN type. Possible values are ATMELANXob and ATMELANBe.

Enable
Enable bit of the ELAN; 1 = enable ELAN, 2 = disable ELAN.

All PVC Circuits
Return all PVCs (Permanent Virtual Circuits) that belong to this ELAN. Each circuit id is a 32 bit field.

Card
Virtual card number. Currently only 13 is accepted.

Port
Virtual port number. Currently this number is the ELAN id.

Segment ID
Virtual port number. Currently this number is the ELAN id.

Status
The current status of the entry. Entries may be added by specifying a value of `valid`, and removed by entering `invalid`.

Segment Type
The virtual segment type.

ATM Packet Circuit

Within this view is the ATM Circuit Table view which provides the following information:

Index
The index to the packet circuit table.

Priority
Priority bit of the circuit. 1 = normal priority and 2 = high priority.

Enable
Enable bit of the circuit. 1 = enable circuit and 2 = disable circuit.

Type
The type bit of the circuit. 1 = virtual circuit and 2 = virtual path circuit.

Cost
The cost of the circuit. The range is from 0 to 255 with 0 being the lowest cost.

ELAN Index
The ELAN id to which this circuit belongs.

Card Port
The ATM card/port to which this circuit belongs.

VPI
The packet circuit VPI (Virtual Path Identifier) number.

VCI
The packet circuit VCI (Virtual Channel Identifier) number.

Status
The current status of the entry. Entries may be added by specifying a value of `valid`, and removed by entering a value of `invalid`.

ATM Cell Circuit

Within this view is the ATM Cell Circuit Table which provides the following information:

Index
The index to the cell circuit table. Supports a total of 256 cells.

Priority
Priority bit of the cell. 1 = normal priority and 2 = high priority.

Enable
Enable bit of the cell circuit. 1 = enable cell circuit and 2 = disable cell circuit.

Type
Type bit of the cell circuit. 1 = virtual circuit and 2 = virtual path circuit.

Number of Endpoints
Number of endpoints in the circuit. An endpoint is defined as a combination of card/port/vpi/vci.

Endpoint List
List of endpoints for the circuit. Each endpoint includes:

- Card (32 bit)
- Port (32 bit)
- Vpi (32 bit)
- Vci (32 bit)

Status
The current status of the entry. Entries may be added by specifying a value of `valid`, and removed by entering `invalid`.

ATM Port

Within this view is the ATM Port Table view which contains the following information:

Card
This field indicates the ATM card id.

Port
This field indicates the ATM port id.

Enable
This field indicates if the ATM port is enabled or disabled. 1 = enable and 2 = disable. When the port is disabled no cell traffic will be generated or accepted and no SONET signal is generated.

Loop Timing
This field indicates whether loop timing is enabled. 1 = enabled and 2 = disabled.

HEC Coset
This field indicates whether HECCoset (Header Error Check) is enabled or disabled. 1 = enabled and 2 = disabled. When the port is disabled a SONET signal will not be generated and cell traffic will not be generated or accepted.

HEC Correction
This field indicates whether HEC is enabled or disabled. 1 = enabled and 2 = disabled.

Frame Mode
This field indicates whether the frame mode is SONET, SDH or notApply (no cable plugged in).

Local Loop
This field indicates whether local loop is enabled or disabled. 1 = enabled and 2 = disabled.

Remote Loop
This field indicates the status of loop timing. 1 = enabled and 2 = disabled. When the port is disabled no SONET signal is generated and no cell traffic is generated or accepted.

Force HEC Error
This field indicates the status of forcing cell header checksum error. 1 = enabled and 2 = disabled.

Scrambling
This value indicates the status of scrambling. 1 = enabled and 2 = disabled.

Interface Extensions Configuration

This view contains more detailed network configuration information for the Interface Extensions. To access this view:

1. Highlight the Device Icon within the device view.
2. Select **IF Extensions** from the Icon Subviews menu.

This view provides the following information:

Index
A unique value representing each interface.

Card
The card number associated with this interface.

Port
The port number associated with this interface.

Filter Enable
The state of filtering on this port. If TRUE, then filters are enabled. The filter port table will become valid when filters are downloaded to the port via setting the **cnIfFilterDownload** object. In the high-perfomrance mode, filters will be disabled on all ports execpt the management port

Forwarding Identifier
This object references the correspsonding instance in the MIB object which describes the ports forwarding function. For example, if the port is participating in bridging, then this object contains the OID of the **bridgeGroupPortTable**. If this information is not present, its value is set to the OBJECT IDENTIFIER { 0 0 }.

Filter Download
Downloads the filters to the port. Value will always be read as zero.

NetBIOS Filtering
The state of NetBIOS name filtering on this port. Note that a port with filtering disabled may have a valid NetBIOS name table. The table will become valid when filtering is enabled on the port.

NetBIOS Bcast Discard
This indicates whether NetBIOS broadcasts are to be discarded on this interface.

NetBIOS Name Proxy
The state of NetBIOS name proxying on this port.

Device Configuration View

This view contains more detailed network configuration information for the device. To access this view:

1. Highlight the Device Icon.
2. Select **Device Configuration** from the Icon Subviews menu.

This view provides the following information:

Device Name
The name of the device.

Contact Status
Indicates whether a connection with this device has been established.

Number of Interfaces
Indicates the number of interfaces connected to this device.

Router Redundancy
Indicates whether this device has router redundancy capabilities. This will either be False or True.

IF Address Translation

This button opens the Interface Address Translation Table View, described in ***SPECTRUM Views***.

Reconfigure

Allows you to reconfigure the table. Upon completion a pop-up window appears stating that that the action was successful.

The Device Configuration view also provides you with an Interface Configuration Table which allows double-click access to the Interface

Configuration view (described on Page 3-2), as well as provides the following information. For additional information on tables, refer to ***SPECTRUM Views***.

Index
Indicates the index number to which the interface is attached.

Description
Displays a description of the interface and its location within the switch.

Type
Indicates the type of interface attached to the device. Some possible types are ATM, FDDI, iso88023, etc. For a complete list of interface types refer to ***SPECTRUM Views***.

Bandwidth
Displays the current bandwidth value being used by the interface.

Physical Address
The physical (MAC) address of the interface.

Oper Status
Displays the current operational status of the interface.

Admin Status
Displays the current Administrative status of the interface, either on or off.

Last Change
Displays when the last change was made to the interface.

Packet Size
Displays the size of the packet on the interface.

Chapter 4

Application Views

What Is in This Chapter

This chapter describes the Bay Networks Centillion 100 Chassis device-specific applications listed below.

- CentATMApp
- CentCommonApp

Common Applications

This device supports the following common applications described in the ***MIB II Applications***:

- MIB-II (SNMP2_Agent)
  - ICMP (ICMP_App)
  - IP (IP2_App)
  - System (System2_App)
  - UDP (UDP2_App)
- RS-232 App (RFC1317App)

Application View

The Application view displays information on any application supported by the device. Each application appears as an icon in the Application view. Access application-specific Model Information Views, Performance Views, and Detail Views from these icons. Depending on the specific application, various additional views are also available and discussed in this section.

Device Application View

This view shows the common and device-specific applications supported by this device and provides access to application-specific information.

Figure 4-1 shows an example of an Application view in the Icon mode. Figure 4-2 shows an example of an Application view in the List mode.

To change the display mode, select **View -> Mode -> List** or **Icon**.

Figure 4-1. Device Application View (Icon Mode)

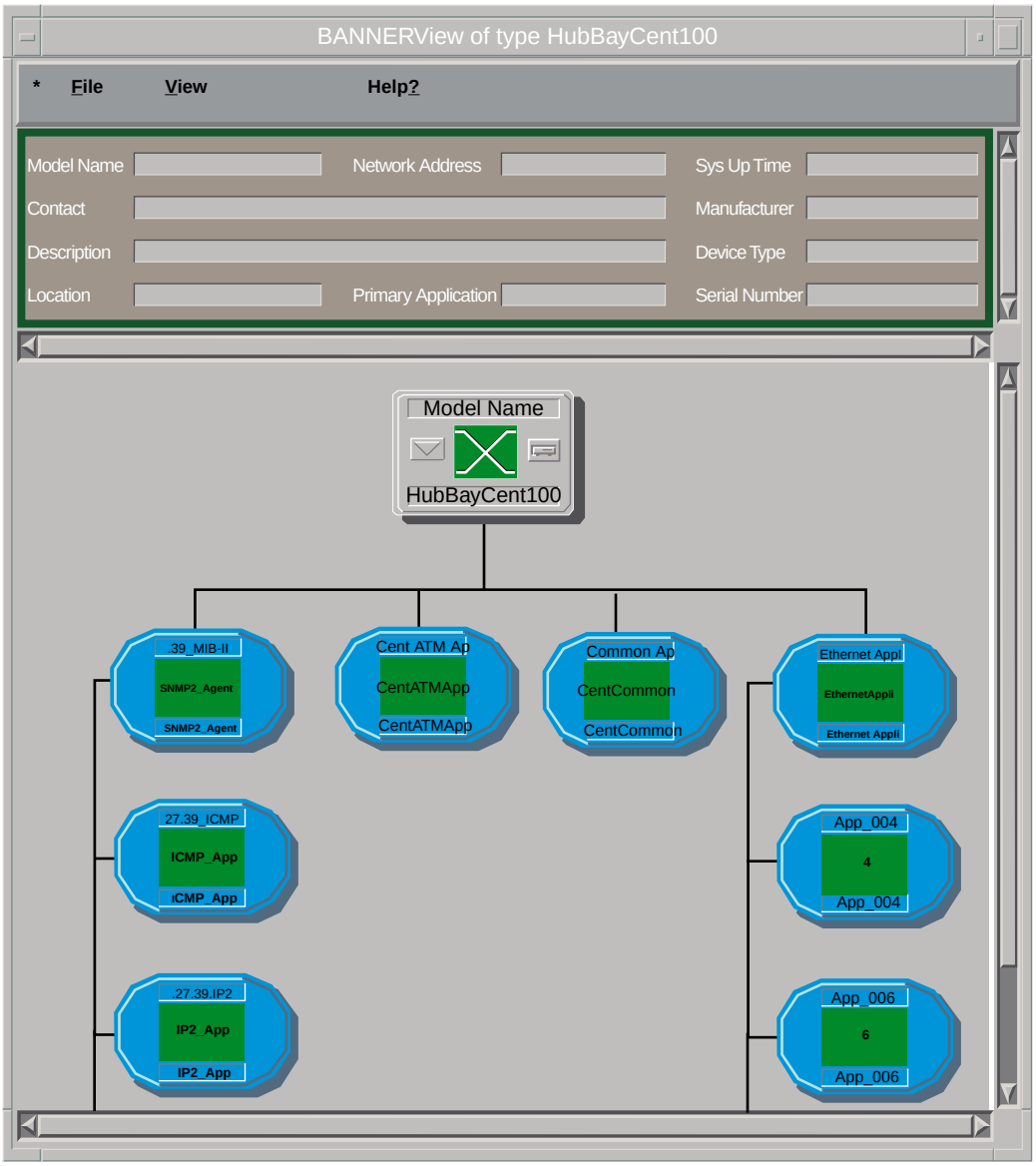
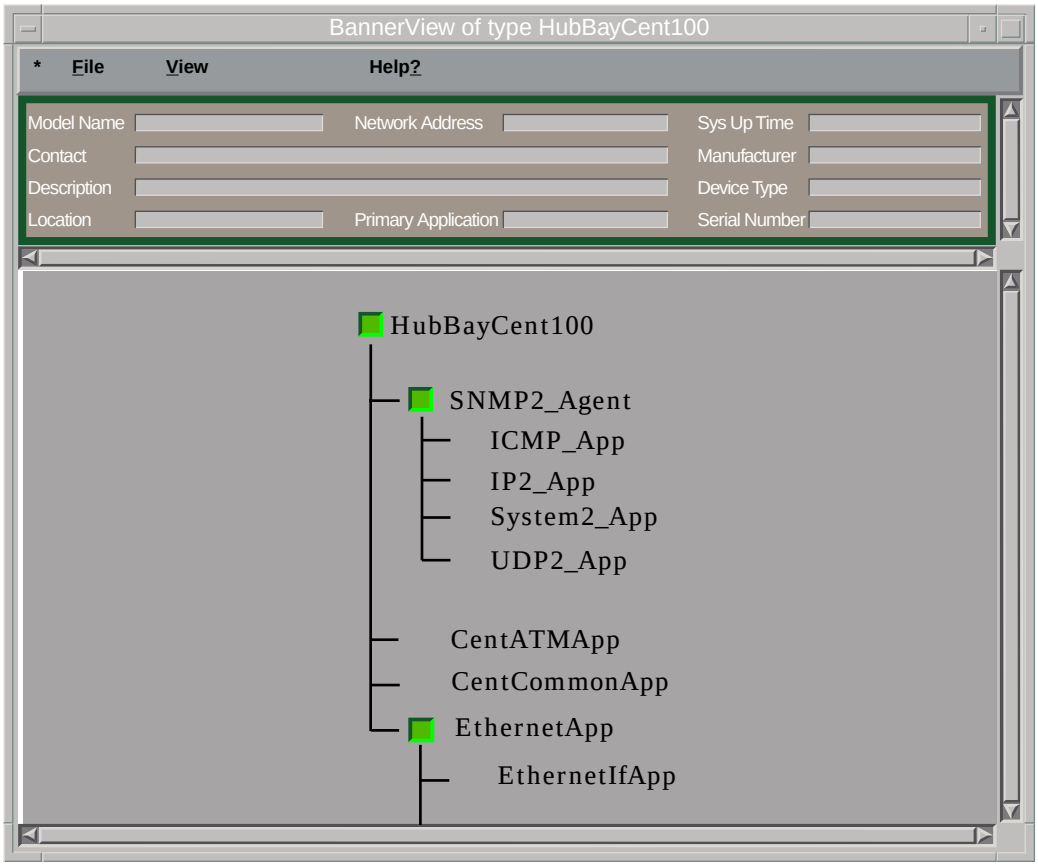


Figure 4-2. Device Application View (List Mode)



ATM Application

This application provides access to ATM functionality for this device. The model type for this application is CentATMApp. Table 4-1 describes each of the application-specific Icon Subviews menu selections available for the ATM application.

Table 4-1. CentATMApp Icon Subviews Menu

Menu	Description
ATM Configuration	Opens four sub menu selections described in Chapter 3, ConfigurationViews.
ATM Monitor	Contains three sub selections: the ATM Port Statistics view, described in Chapter 3, Configuration Views, the ATM ELAN PVC Statistics view, described on page 4-6, and the ATM PVC Status view, described on page 4-6.
Model Information	Opens the Model Information View, refer to ***SPECTRUM Views.***

ATM Monitor

This menu selection contains the following sub selections:

ATM Port Statistics View

This view provides the following information:

Card
Displays the card index.

Port
Displays the port index.

Signal
This bit field indicates whether the port receives a signal from the remote ATM port. A value of 1 = signal present and 2 = no signal present.

RX Bad HEC Cell
The number of cells received that have a bad ATM cell header (HEC). The error is usually due to a physical layer problem. For example, when the fiber is first connected to the system or a clock mismatch.

Rx Dma Drop Cell
The number of cells received but discarded by the ATM header validation checking. The error is usually due to an incorrectly configured VPI/VCI, or other configuration error.

Rx Good Cell
The number of cells received that are valid.

Tx Dma Drop Cell
The number of outgoing cells dropped due to congestion.

Tx Good Cell
The number of cells transmitted.

ATM ELAN PVC Statistics View

This view provides the following information:

ELAN Index
The ELAN index

PVC In Ucast Pkt
The number of unicast packets that is received from this ELAN PVC.

PVC In Mcast Pkt
The number of multicast packets that is received from this ELAN PVC

PVC Out Ucast Pk
The number of unicast packets that is transmitted from this ELAN PVC.

PVC Out Mcast Pk
The number of multicast packets that is transmitted from this ELAN PVC.

ATM PVC Status

This view provides the following information:

Index
This field is the index of the circuit.

ELAN ID
This field is the index of the ELAN this circuit belongs to.

RS Info
This field is based on the aging timer of a remote switch. If the local switch has not received any packets from the remote switch for a period of time, then it is declared as non-valid.

RS Mac Address
This field lists the remote switch's MAC address. If the **`ATMInterSwitchPvcRemoteSwitchInfoValid`** object is 1, then this field contains valid info. Otherwise, this field contains the last learned info.

RS PVC Status
This field is set if the remote switch receives packets from this switch. If **`ATMInterSwitchPvcRemoteSwitchInfoValid`** object is 1, then this field contains valid info. Otherwise, this field contains the last learned info.

STP State
This field indicates the STP port state of the circuit.

Centillion Common Application

This application provides access to common functionality for this device. The model type for this application is CentCommonApp. Table 4-2 describes each of the application-specific Icon Subviews menu selections available for the Common application.

Table 4-2. CentCommonApp Icon Subviews Menu Selections

Menu Selection	Desription
Chassis Configuration	Opens the Chassis Configuration view, described in Chapter 3, *Configuration Views*.
Agent Configuration	Opens the Agent Configuration view described in Chapter 3,*Configuration Views*.
Lan Port Table	Opens the Lan port Table view described on Page 4-8.
Station Group	Opens the Station Group view described on Page 4-8.
Trap Receiver	Opens the Trap Receiver view described on Page 4-9.
Netbios Group	Opens the Netbios Group view described on Page 4-10.
Card Monitor Table	Opens the Card Monitor Table view described on Page 4-11.
Global Ring Table	Opens the Global Ring Table view described on Page 4-12.
Bridges	This menu selection contains five sub-selections: The Bridge Group view described on Page 4-15, the Virtual Bridge Group view described on Page 4-16, the Bridge Base view described on Page 4-17, the Spanning Tree view described on Page 4-18, and the Source Routing view described on Page 4-21.
Routing Information	This menu selection contains two sub-selections: the RIF Table view described on Page 4-21, and the RID Table view described on Page 4-22.

Table 4-2. CentCommonApp Icon Subviews Menu Selections (Continued)

Menu Selection	Desription
Virtual Segment	Opens the Virtual Segment view described on Page 4-22.
Filters	This menu selection contains two sub-selections: the Filter Group Table view described on Page 4-24, and the Filter Port Table view described on Page 4-26..
IF Extensions	This menu selection contains two sub-selections: the IF Extensions view described on Page 4-27, and the TR IF Extension view described on Page 4-27.
Fdb Group	Opens the Fdb Group view described on Page 4-27.
Model Information	Opens the Model Information view described in ***SPECTRUM Views***.

Lan Port Table

This table provides the following information:

Index
Index into the LAN Port Table.

State
Current state if the port is enabled.

In Use
Current state if the port is enabled.

Body Type
Port body type.

Daughter1 Type
Daughter card 1 interface.

Daughter2 Type
Daughter card 2 interface.

Daughter3 Type
Daughter card 3 interface.

Local Ring Index
Index into the local ring table.

Station Group

This table provides station information known in the system:

MAC Address
The stations MAC (physical) address. The station table is indexed by the low 13 bits of this address.

Card
Card number attached to this station.

Port
Port number attached to this station.

In Use
This bit indicates whether the entry is valid.

Local
Indicates whether the station is locally attached.

Static
Indicates whether the station is static.

DTAG Type
Indicate DTAG type. Clear (0) indicates the DTAG specifies a card and port combination.

Duplicate
Indicates next station is a duplicate MAC address.

Next Index
Index into the station collision table.

RIF In Use
Indicates whether the RIF (Routing Information Field) is set.

RIF Index
Index into the RIF table. Static RIFs may be configured by first adding or retrieving the appropriate RIF index object in the RIF table.

VCI State
Type of VCI connection.

VCI Index
Index into the VCI table.

Trap Receiver

This view provides the following information:

Get Community
The system get community string.

Set Community
The system set community string.

Enable Traps
Indicates whether the SNMP agent is permitted to process traps. This object provides global trap enable status, as specific traps may be enabled or disabled on an individual basis.

This view also contains the Trap Receiver table which is a list of network management stations that are capable of receiving traps generated by the system. This table contains the following information:

Address
The IP address of the network managment entity that will receive traps.

Status
Setting this object to `invalid` has the effect of invalidating the corresponding entry in the **`sysSNMPReceiverTrapTable`**. On a read, the value `valid` is returned. Entries are added into the table by specifying a previously unknown **`trapRcvrNetAddress`** along with the corresponding **`trapRcvrCommunity.`**

Community
The community string to use for traps sent to this trap receiver.

Netbios Group

This view contains the following information:

Table Aging Timer
The timeout period, in seconds, for aging out dynamicallly learned Netbios names. The default value is 300 seconds.

Query Interval
The time period, in hundreds of milliseconds, in which Netbios name queries are allowed to be bridged. A value of 0 disables this field. The default value is 5 (a half second).

Table Flush
Indicates whether the Netbios name table should be flushed. Flushing the table removes all of the dynamically learned entries. When read this object always returns a value of `clear`.

This view also contains the Netbios Name Table, which contains the following information:

Name
The Netbios name.

Status
The status of the Netbios name entry. Setting this object to `invalid` (2) causes the entry to be deleted from the name table. The value should always be read as `valid`(1).

Station Address
The address of the station from which this name was learned or configured. This object must be specified when adding an entry into the table.

VRing
The virtual ring number from which the entry was learned or configured. If the switch is operating in a mode where virtual rings are invalid, then this number will be 0. This object must be specified when adding an entry in the table if appropriate.

Card
The card number from which the entry was learned or configured. If the switch is operating in a mode where virtual rings are valid, then this number will be 0. This object must be specified when adding an entry in the table if appropriate.

Port
The port number from which the entry was learned or configured. If the switch is operating in a mode where virtual rings are valid, then this number will be 0. This object must be specified when adding an entry in the table if appropriate.

Port Type
The type of port from which the entry was learned or configured.

Age
The amount of time (in hundredths of a second) before this entry is aged, or the elapsed time since the entry was learned or configured.

Proxies
The number of times that the switch has proxied for this station.

Suppressed Queries
The number of Netbios name queries from this station which were suppressed by the switch due to the configured name query interval.

Card Monitor Table

This view contains the following information:

Board
The card number index. Valid entries are system dependent based on the chassis type.

Cells Received
The number of cells revceived by the card. This statistic is not maintained in high-performance mode.

Cells Transmitted
The number of cells transmitted by the card. This statistic is not maintained in high-performance mode.

Cells Dropped
The number of cells dropped by the card.

SARReceived
The number of Segmentation And Reassembly (SAR) packets revceived by the card. This statistic is not maintained in high-performance mode.

SARTransmitted
The number of SAR packets transmitted by the card. This statistic is not maintained in high-performance mode.

SARDropped
The number of SAR packets dropped by the card.

MSIMsgs
The total number of MSI messages to and from the card. This statistic is not maintained in high-performance mode.

Global Ring Table

This view contains the following information:

Global Ring
Index into the global ring table.

In Use
Indicates a valid entry if set.

Virtual Ring
Index into the virtual ring table.

VCI State
Virtual Circuit Index (VCI) state.

VCI Index
Index into the virtual circuit table.

This button opens the Virtual Ring Table view described below.

Virtual Ring Table

VRing
Virtual ring number.

In Use
Indicates a valid entry if set.

MDTag
Forwarding Multicast Destination Tag (MDTag) to all ports on the ring.

Ports
The number of ports contained in the vitrual ring.

NB Filtering
The current state of NetBios Name Filtering on the virtual ring. Default is disabled, i.e. no name filtering.

NB Bcast Discard
This indicates whether NetBIOS broadcast datagrams discard should be discarded on this virtual ring.

NB Proxy
The current state of NetBios Name Proxying on the virtual ring. Default is disabled, i.e. no name proxying.

ARE Hop Counts
All Routes Explorer (ARE) Hop Count in bytes.

STE Hop Count
Spanning Tree Explorer (STE) Hop Count in bytes.

Bridge Port Next
The corresponding bridge port number. If no bridge port is associated with this ring, then zero is returned.

Virtual Ring Port

This button opens the Virtual Ring Port Table view described below.

MDTag

This button opens the Multicast Destination Tag View, described below.

Netbios Name Filter

This button opens the Netbios Name Filter Ring Table view described below.

Virtual Ring Port Table

This view contains the following information:

Virtual Ring
The virtual ring number.

Card Number
The card number for this entry in the virtual ring.

Port Number
The port number for this entry in the virtual ring.

If Index
The value for this object identifies the instance of the **ifIndex** object defined in MIB-II, for the interface corresponding to this port. If no such entry exists, the value 0 may be returned.

Status
The current status of the entry. Entries may be added by specifying a value of valid, and removed by setting the status to invlid.

Multicast Destination Tag View

This view contains the MDTag table which is used by interface cards that forward packets to multiple destinations (ports). It contains the following information:

Index
Index into the MDTag table.

Destination Mask
Destination card/port mask.

Priority
Priority.

VCI In Use
Indicates that the virtual circuit index is valid if set.

VCI Index
Index into the virtual circuit table.

Encap In Use
Indicates that the encapsulation control table index is valid if set.

RID In Use
Indicates that the RID table index is valid if set.

Netbios Name Filter Ring

This view contains the following information:

Ring
The port number to which the filters apply.

Index
A unique value for each filter group within the port.

Status
The status of this Netbios filter entry. Entries may be deleted by setting this object to `invalid`(2).

Name
The Netbios name to match for filtering. The name will be blank padded.

Action
The action to take upon matching the name filter.

Bridges

This menu selection contains the following sub-selections:

Bridge Group

Centillion Networks switches support multiple bridging groups. Bridge groups are identified by a unique bridge group identifier. These switches allow a multiple number of bridge groups to be configured. The bridge configuration MIB allows a management application to perform configuration across any of the bridge groups.This view contains the following information:

Base Bridge Group Identifier
The bridge group identifier for which the standard bridging MIBS apply. Modifications of the bridge group through the standard bridging MIBs effects this bridge group only.

This view also contains the Bridge Group Table which provides you with the following information:

Bridge Group
The unique identifier of this bridge group.

Status
The current status of the bridge group. Bridge groups may be added by specifiying a valid status, and removed by specifying an invalid status.

Base Type
Indicates the type of bridging being performed. A value of `none` implies that switching is performed between ports in this bridge group. A value of `unknown` implies that some unknown bridging rules are applied on the ports in this bridge group. Modifying the **bridgeGroupBaseType** requires a complete reset of the bridge group. Other possible values are: transparent-only, sourceroute-only, srt, and translation.

Stp Protocol
The version of the Spanning Tree Protocol that is being run. This field may be ignored if the **bridgeGroupBaseType** value is none. Possible values are: none(1), unknown(2), decLb100(3), ieee8021d(4), and ibm(5).

Port Type
Indicates the type of the bridge ports. This value may only be altered if there are no bridge ports currently in the bridge group. This value must be specified during bridge group creation.

Next Port Index
The value of the next bridge port number which will be assigned by the switch.

Bridge Group Port

This Button opens the Bridge Group Port Table view which is detailed below.

Bridge Group Port Table

This view contains a table which provides information about each port that is associated with this bridge group. Ports may be added by specifying a valid port index, and a valid status. Entries are deleted by setting the corresponsing object to invalid. This table contains the following information:

Bridge Group
The bridge group identifier to which this port belongs.

Port Index
The value of the instance of the **dot1dBasePort** object, defined in the Bridge MIB, for the bridge port corresponding to this port.

Status
The current status of the bridge port entry. Bridge ports may be added by specifiying a valid status, and removed by specifying an invalid status.

IF Index
The value of the instance of the **ifIndex** object, defined in MIB-II, for the interface corresponding to this port. Bridge ports are added by specifying the **ifIndex** instance for the bridge port.

Virtual Bridge Group

This view opens the Virtual Bridge Port configuration table. A virtual bridge is composed of either virtual rings or ports forming a logical bridge port. Currently, each virtual ring comprises a unique virtual bridge port. Multiple card and ports may be combined into a virtual bridge port. This view contains the following information:

Virtual Bridge Next Port Number
The value of the next bridge port number which will be assigned by the switch. When adding ports in transparent briding mode, the specified **`virtualBridgePortConfigNumber`** must match this value.

This view also contains the Virtual Bridge Port Configuration table, which provides the following information:

Virtual Bridge
The virtual bridge port number.

Card
The card number for this entry in the virtual bridge port.

Port
The port number for this entry in the virtual bridge port.

If Index
The value for this object identifies the instance of the **`ifIndex`** object defined in MIB-II, for the interface corresponding to this port. If no such entry exists, the value 0 may be returned.

Circuit
For a port which (potentially) has the same value of **`virtualBridgeConfigIfIndex`** as another port, this object contains the name of an object instance unique to this port. For example, in the case where multiple ports correspond one-to-one with multiple ATM VCs, this value identifies the ATM VC associated with this port.

Status
The current status of the entry. Entries may be added by specifying a value of `valid`, and removed by setting the status to `invalid`.

Bridge Base

This view contains the following information:

Bridge Address
The MAC address used by this bridge when it must be referred to in a unique fashion. It is recommended that this be the numerically smallest MAC address of all ports that belong to this bridge. However, it is only required to be unique. When concatenated with **`cndot1dStpPriority`** a unique BridgeIdentifier is formed which is used in the Spanning Tree Protocol.

Number of Ports
The number of ports controlled by this bridging entity

Type
Indicates what type of bridging is being performed if a bridge is actually performing a certain type of bridging this will be indicated by entries in the

port table for the given type. Possible types are: unknown, transparent-only, source-route only, and srt.

Source Routed Frames Forward
Indicates whether the system will forward source routed frames if running in transparent bridging mode. If this value is `disabled`(1), the system will drop all source-routed frames. The default value is `disabled`(1).

This view also contains the Bridge port Table. Which is a table that contains generic information about every port that is associated with this bridge. Transparent, source-route, and srt ports are included. This table provides the following information.

Port Number
The number of the port for which this entry contains bridge management information.

If Index
The value of the instance of the **ifIndex** object, defined in MIB-II, for the interface corresponding to this port.

Circuit
For a port which (potentially) has the same value of **`cndot1dBasePortVirtualRing`** as another port on the same bridge, this object contains the name of an object instance unique to this port. For example, in the case where multiple ports correspond one-to-one with multiple X.25 virtual circuits, this value might identify an (e.g., the first) object instance associated with the X.25 virtual circuit corresponding to this port. For a port which has a unique value of **`dot1dBasePortIfIndex`**, this object can have the value { 0 0 }.

Spanning Tree

This view contains the following information:

Protocol Specification
An indication of what version of the Spanning Tree Protocol is being run. The value `decLb100`(2) indicates the DEC LANbridge 100 Spanning Tree protocol. `IEEE 802.1d` implementations will return 'ieee8021d(3)'. If future versions of the IEEE Spanning Tree Protocol are released that are incompatible with the current version a new value will be defined.

Priority
The value of the writeable portion of the Bridge ID, i.e., the first two octets of the (8 octet long) Bridge ID. The other (last) 6 octets of the Bridge ID are given by the value of **`cndot1dBaseBridgeAddress`**.

Time Since Topology Change
The time (in hundredths of a second) since the last time a topology change was detected by the bridge entity.

Topology Changes
The total number of topology changes detected by this bridge since the management entity was last reset or initialized.

Designated Root
The bridge identifier of the root of the spanning tree as determined by the Spanning Tree Protocol as executed by this node. This value is used as the Root Identifier parameter in all Configuration Bridge Protocol Data Units (PDUs) originated by this node.

Root Cost
The cost of the path to the root as seen from this bridge.

Root Port
The port number of the port which offers the lowest cost path from this bridge to the root bridge.

Max Age
The maximum age of Spanning Tree Protocol information learned from the network on any port before it is discarded, in units of hundredths of a second. This is the actual value that this bridge is currently using.

Hello Time
The amount of time between the transmission of Configuration bridge PDUs by this node on any port when it is the root of the spanning tree or trying to become so, in units of hundredths of a second. This is the actual value that this bridge is currently using.

Hold Time
This time, in units of hundredths of a second, determines the interval length during which no more than two Configuration bridge PDUs shall be transmitted by this node.

Forward Delay
This time value, measured in units of hundredths of a second, controls how fast a port changes its spanning state when moving towards the Forwarding state. The value determines how long the port stays in each of the Listening and Learning states, which precede the Forwarding state. This value is also used, when a topology change has been detected and is underway, to age all dynamic entries in the Forwarding Database.

Bridge Max Age
The value that all bridges use for MaxAge when this bridge is acting as the root. The granularity of this timer is specified by 802.1D-1990 to be 1 second. An agent may return a `badValue` error if a set is attempted to a value which is not a whole number of seconds.

Bridge Hello Time
The value that all bridges use for **HelloTime** when this bridge is acting as the root. The granularity of this timer is specified by 802.1D-1990 to be 1 second. An agent may return a `badValue` error if a set is attempted to a value which is not a whole number of seconds.

Bridge Forward Delay
The value that all bridges use for **ForwardDelay** when this bridge is acting as the root. Note that 802.1D-1990 specifies that the range for this parameter is related to the value of **cndot1dStpBridgeMaxAge**. The granularity of this timer is specified by 802.1D-1990 to be 1 second. An agent may return a badValue error if a set is attempted to a value which is not a whole number of seconds.

This view also contains the Spanning Tree Port Table view which provides the following information:

Port
The number of the port for which this entry contains Spanning Tree Protocol management information.

Priority
The value of the priority field which is contained in the first (in network byte order) octet of the (2 octet long) Port ID. The other octet of the Port ID is given by the value of **cndot1dStpPort**.

State
The port's current state as defined by application of the Spanning Tree Protocol. This state controls what action a port takes on reception of a frame. If the bridge has detected a port that is malfunctioning it will place that port into the broken(6) state. For ports which are disabled (see **cndot1dStpPortEnable**), this object will have a value of disabled(1). Possible values are: disabled, blocking, listening. learning, forwarding, and broken.

Status
The enabled/disabled status of the port.

Path Cost
The contribution of this port to the path cost of paths towards the spanning tree root which include this port. 802.1D-1990 recommends that the default value of this parameter be in inverse proportion to the speed of the attached LAN.

Designated Root
The unique Bridge Identifier of the Bridge recorded as the Root in the Configuration BPDUs transmitted by the Designated Bridge for the segment to which the port is attached.

Designated Cost
The path cost of the Designated Port of the segment connected to this port. This value is compared to the Root Path Cost field in received bridge PDUs.

Designated Bridge
The Bridge Identifier of the bridge which this port considers to be the Designated Bridge for this port's segment.

Designated Port
The Port Identifier of the port on the Designated Bridge for this port's segment.

Forward Transitions
The number of times this port has transitioned from the Learning state to the Forwarding state.

Source Routing

This view provides the following information:

Explorer Proxy
Indicates whether the bridge proxies explorer packets.

This view also contains the Source Routing Port Table which provides information about every port that is associated with this source route bridge, including:

Port
The number of the port for which this entry contains Source Route management information.

ARE Hop Count
The maximum number of routing descriptors allowed in an All Paths Explorer (ARE) frame.

STE Hop Count
The maximum number of routing descriptors allowed in a Spanning Tree Explorer (STE) frame.

Routing Information

This Icon Subviews menu selection contains the following sub selections:

RIF Table

This view contains the RIF Table which provides the following routing information used by stations:

Path
RIF field, read from left to right, i.e. read from the switch.

Index
Index into the RIF table. This index is used to enter an RIF in the station table.

In Use
Indicates that this RIF entry is valid if set. A unique RIF entry may be deleted only if it is not in use by a station.

Count
The number of stations that this RIF is associated with.

Length
Byte length of the RIF entry.

Next
Next RIF field.

Previous
Previous RIF field.

RID Table

This view contains the Routing Information Descriptor (RID) table information:

Index
Index into the RID table.

In Use
Indicates that this RID entry is valid if set.

Encap In Use
Indicates that the encapsulation control table index is valid if set.

Encap Index
Index into the encapsulation control table.

VCI In Use
Indicates that the VCI Index is valid if set.

VCI Index
Index into the virtual circuit table.

Virtual Segment

This view contains the following information:

Config Number
The total number of configured virtual segments in the system.

Active Number
The total number of active virtual segments in the system.

In addition, this view contains the Virtual Segment Table view, which provides information on each virtual segment exisiting in the system. A single entry in the virtual segment table may be added by specifying a valid status for a non-existent entry in the table. Note that if no other values are specified in the set request, they are defaulted to a value that is appropriate to the type of virtual segment.

Type
The virtual segment type.

Id
The virtual segment identifier. The identifier is interpreted based upon the **virtualSegmentType** object. For example, the **virtualSegmentIdentifier** for a token-ring VSegment is the ring number. This identifier must be unique across local VSegments within the specific **virtualSegmentType**.

Status
The current status of the virtual Segment entry. VSegments may be added by specifiying a valid status, and removed by specifying an invalid status.

IF Index
The value of the instance of the **ifIndex** object, defined in MIB-II, for the interface corresponding to this VSegment.

Configured Port
The number of ports configured in this VSegment.

Active Port
The number of active ports in this VSegment.

Specific
The object identifier used to reference the corresponding instance in a VSegment specific MIB. If this information is not present, its value is set to the OBJECT IDENTIFIER { 0 0 }.

Admin Encapsulation
The encapulation used for generating management frames for multicast, broadcast and unknown destinations. The default values are specific to the **virtualSemgentTypeId** and are assigned as follows: token-ring:iso88025-tokenRing, ethernet, and ethernet-iso88023. Allowable values are also dependent on the **virtualSegmentTypeId**.

Virtual Segment Port

This button opens the Virtual Segment Port table view, which contains the following information:

Virtual Segment Port

Type
The virtual segment type of which this port is a member.

Id
The virtual segment identifier of which this port is a member.

Card
The card number for this port in the virtual Segment.

Port
The number for this port in the virtual Segment.

Status
The current status of the entry. Entries may be added by specifying a value of valid, and removed by setting the status to invalid.

IF Index
The value for this object identifies the instance of the **`ifIndex`** object defined in MIB-II, for the interface corresponding to this port. If no such entry exists, the value 0 may be returned.

Filters

This menu selection contains the following sub-selections:

Filter Group Table

Filter Group Table. Entries are added into the group by specifying values for all objects with the exception of the **`filterGroupMonitorDests`** and **`filterGroupAdditionalDests`** objects. Entries are deleted simply by specifying the appropriate **`filterGroupStatus`** value. An entry in the filter group table. Table entries are indexed by the unique user-defined group name, and the filter entry index as assigned by the system.

Name
A unique user-defined string identifying the filter.

Index
The index of the filter entry within the filter group. Any filter group entry is uniquely identifable by the group name and index.

Status
The status of this filter group entry. Entries may be deleted by setting this object to invalid.

Match
The match condition for the filter. Match conditions are in the form of the usual logical operators.

- lt(1) -- match if less than
- eq(2) -- match if equal

- le(3) -- match if less than or equal
- gt(4) -- match if greater than
- ne(5) -- match if not equal
- ge(6) --match if greater than or equal

Type
The type of filter. MAC filters are defined from the start of the MAC frame. LLC filters are defined from the start of the LLC header (after RIF).

Offset
The byte offset from the beginning of the header to the value to filter.

Value
The filter value field. The value is specified as a hexadecimal string up to 12 bytes.

Forward
The forwarding rule for the filter. Forward to normal indicates that the frame should be forwarded as usual. Table 4-3 list all possible values.

Table 4-3. Forwarding Values

Value	Descriptions
normClear	normal forwarding cleared
alt	forward to alternate card/ports
add	forward to addiitional card/ports
addAlt	forward to additional and alt card/ports
norm	forward using normal rules
normAlt	forward to normal and alt card/ports
normAdd	forward to normal and add card/ports
normAddAlt	forward to norm+add+alt card/ports
drop	frame is dropped

Next IF Match
The next filter entry as referenced by the filter index to apply if the filter match succeeds. An entry of 0 indicates that filtering ends for the packet. An entry whose value is larger than the number of filters in the group indicates that the next filter entry to apply is the next filter group (if any) enabled on the port.

Next IF Fail
The next filter entry as referenced by the filter index to apply if the filter match fails. An entry of 0 indicates that filtering ends for the packet. An entry whose value is larger than the number of filters in the group indicates that the next filter entry to apply is the next filter group (if any) enabled on the port.

Monitor Dests
A list of the monitoring cards and ports to send packets matching this filter. Each octet is formatted as follows: the high-order 4 bits represent the card number, the low order 4 bits are the port number.

Additional Dests
A list of the additional cards and ports to send packets matching this filter. Each octet is formatted as follows: the high-order 4 bits represent the card number, the low order 4 bits are the port number.

Filter Port Table

The filter port table defines the active filter groups associated with a card and port. Filters are configured by first establishing appropriate filter groups, then applying the groups to some number of cards and ports using this table. Table entries are indexed by the unique user-defined group name, and the filter entry index as assigned by the system.

Card
The card number to which the filters apply.

Port
The port number to which the filters apply.

Index
A unique value for each filter group within the port.

Status
The status of this filter port entry. Entries may be deleted by setting this object to invalid.

Group Name
The filter port group name.

IF Extensions

This menu selection contains the following sub-selections:

IF Extensions (Application View)

This view contains the same information as the IF Extensions Configuration view in Chapter 3, *Configuration Views*.

TR IF Extensions

This table contains Token Ring interface parameters and state variables, one entry per 802.5 interface.

IF Index
The value of this object identifies the 802.5 interface for which this entry contains management information. The value of this object for a particular interface has the same value as the **`ifIndex`** object.

Port Connection Type
The type of connection used on this port. Setting a value to this object requires the port to be reset and re-opened before taking effect. Allowable connections are: `Station` - (default) the port is configured as a standard ring station, `Ring-In/Ring-Out` - the port is connected to the Ring-In or Ring-Out port of a MAU with an appropriate cable. `DTR` - the port has a direct connection to a ring station.

Port Speed Sense
Indicates whether speed sensing is enabled (default), or disabled on the port. This is used in conjunction with the RingSpeed to either match or force the configured speed.

Admin Ring Sense
The configured ring speed of the port. The speed will take effect on the next opening of the ring.

FDB Group

This table contains FDB information for each station known to the system, one entry per station. Static stations may be created by specifying the **`stationAddress`**, **`stationCard`** and **`stationPort`**. Entries may be subsequently modified by setting the appropriate object for the entry. Entries are deleted by clearing **`stationInUse`**.

Remote Aging Timer
The timeout period, in seconds, for aging out dynamically learned remote (off-ring) stations. The default value is 300 seconds.

Table Flush
When read, this object returns a zero length string. If set, the octets describe which stations to flush. All 4 octets must be specified. The encoding of the octet string is as follows:

- octet 1: the FDB type identifier to flush, unknown (1) indicates flush any FDB type.
- octet 2: 0x0 to flush remote stations 0x1 to flush local stations 0x2 to flush all stations
- octet 3: the card number to flush, a value of 0xff will flush all cards.
- octet 4: the port number to flush, a value of 0xff will flush all ports.

This view also contains the FDB Entry table which contains the following information:

Type
The type of the station. Station addresses are represented in the canonical form as specified by their type.

Address
The FDB's physical address. The physical address is represented in the canonical form according to the corresponding **Type**. If the entry is a route-descriptor type, then the physical address is in the form of ring-ring-bridge.

Card
The card number through which this station is reached.

Port
The interface through which this station is reached.

IF
The interface through which this station is reached. The value for this object identifies the instance of the **ifIndex** object defined in MIB-II. If no such entry exists, the value 0 may be returned.

Status
This indicates the validity of the station. Stations are added by supplying the required objects and setting the status to valid. Static stations may be deleted by setting this object to invalid.

Local
Indicates the station is locally attached if set.

Static
Fdb is static if this bit is set.

Duplicate
Indicates that another FDB with the same address was learned from a different card and port.

RIF Path
The RIF path to the station. The RIF Path is specified as being sourced from the system, as read from left-to-right. An RIF path is valid only for objects whose **stationType** is `token-ring`. The value may be a zero length string.

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